Pacific Southwest Forest and Range
Experiment Station - Berkeley, California
Forest Service - U. S. Department of Agriculture

U. S. FOREST SERVICE RESEARCH NOTE PSW-7 1963

INTERMOUNTAIN STATION
Central Reference File
No. 0.73 x2.26

# A SYSTEM FOR RECORDING FOREST TREE SEED LOT INFORMATION IN CALIFORNIA

By
Douglass F. Roy
Research Forester

ABSTRACT: A detailed seed lot record-keeping system is proposed for California. This system provides a means of recording information concerning the collection site, the seed trees, the seed collection, the method of handling the seed lot, and disposition of the seed.

---

Much has been written concerning geographical races of tree species, provenance, and seed collection zones. Foresters agree that the usefulness of a given seed source is judged by assessing the performance of trees grown from seeds produced by it. But too often artificially regenerated forest stands cannot be traced to their parent seed sources because complete and permanent seed lot records are lacking. A system has been developed for recording forest tree seed information in California which may bridge the gap.

Helpful suggestions were received from several reviewers, including: Ronald S. Adams, California Division of Forestry; John W. Duffield, Industrial Forestry Association; Dietrich W. Muelder, University of California School of Forestry; and members of the U.S. Forest Service: Harry A. Fowells and Charles A. Rindt, Washington Office; John Buck, California Region; and Russell K. LeBarron, Robert Z. Callaham, and Frank J. Baron, Pacific Southwest Forest and Range Experiment Station.

Reviewers generally rated the system favorably, but some thought the proposal considerably ahead of its time and somewhat too detailed, technical, and cumbersome for general field use. But a detailed form was designed, first, because seed collection is a technical matter, and second, because great heterogeneity exists within any present major seed zone. Differences

CENTRAL FILE COPY

in site characteristics caused by changing elevations, aspects, soils, and drainage are obvious. The form provides a means of recording these differences and others which are more subtle.

At present some seed collectors may want to use only part of the system. But the complete system establishes a worthwhile objective by providing the necessary machinery to keep more detailed seed collection records as time goes on. Such a trend seems inevitable.

## The Seed Lot Record Card

The basic instrument for the forest tree seed lot record is a form printed on a card cut for standard key sorting. Marginal code fields are provided so that cards can be sorted by seed lot numbers, species, major and local seed zones, and elevations.

One side of this form (fig. 1) records seed lot number and other pertinent information which will be entered in turn by the seed collector, extractor, and nurseryman. Boxes for each entry on the card (except seed collector's name, soil series name, and angiospermous fruit data) indicate the number of digits required. The use of numbers to record information permits easy transfer of data to other cards for electronic data processing. Some entries on the seed lot record card require coding. Two codes are printed on the back of the card. For other entries, either blank spaces or a multiple choice system provide a way to record information in the field. Necessary coding can be completed in the office later.

The back of the card is designed for listing a continuous inventory of the seed lot (fig. 2).

As much information should be recorded for any given seed lot as the seed handler is technically qualified to supply. But records should be accurate. In some cases certain items must be left blank. For example, some seed collectors may not know soil characteristics and, therefore, cannot enter some of the soils data. Training will minimize these cases and will help us obtain complete records which will be most useful in the future.

## Entries on the Card

The front of the card consists of three columns. The left-hand column provides space for identifying the seed lot by number, species, collection date, and name of the collector. It also records site information in terms of seed zone, dominant tree, site index, elevation, aspect, slope, location, soil, National Forest, and county.

The center column lists information concerning the stand of trees from which the seed lot was collected, including whether natural stand or plantation, number of parent trees, stand density, stand area, and characteristics of seed trees.

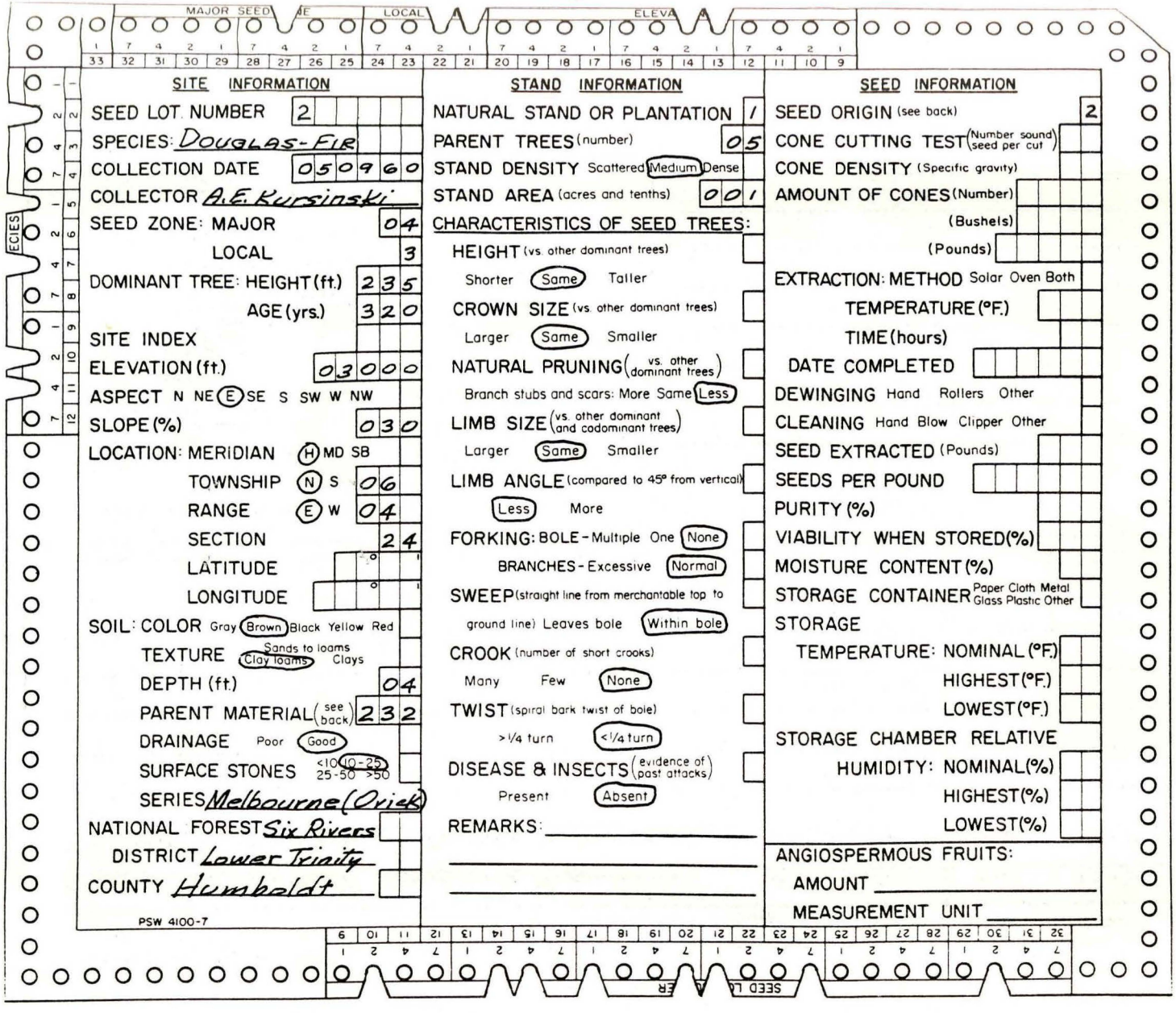


Figure 1.--Seed lot record card as marked by seed collector in field.

## INVENTORY

Date stored Oct. 3, 1960

| DATE | DESTINATION | USE | STORAGE TEMPERATURE | VIABILITY | AMOUNT | BALANCE |
|---|---|---|---|---|---|---|
| Nov. 8, 1960 | Six Rivers N.F. | Seed spots, Mosquito Unit Blk. H-6 | 0 | 81 | 3-0 | 32-0 |
| May 8, 1961 | Placerville Nursery | Seed beds No.s 18, 19 | 0 | 79 | 4-8 | 27-8 | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

PARENT MATERIAL UNDERLYING SOILS

| CODE | |
|---|---|
| (100) | Alluvial or colluvial material |
| 110 | Recent |
| 120 | Terrace (marine or valley) |
| 130 | Glacial moraine |
| 140 | Colluvial (old consolidated talus, etc.) |
| 150 | Dune sand |
| (200) | Residual soils |
| (210) | Igneous rocks |
| 211 | Acid igneous (granite, rhyolite) |
| 212 | Basic igneous (basalt, andesite) |
| 213 | Ultra-basic (serpentine, peridotite) |
| 214 | Miscellaneous (pumice, obsidian, volcanic mud flow, tuff, cinders) |
| (220) | Sedimentary rocks |
| 221 | Hard sandstone |
| 222 | Soft sandstone |
| 223 | Shale or claystone |
| 224 | Limestone |
| (230) | Metamorphic rocks |
| 231 | Slates |
| 232 | Schists |
| 233 | Marble |

SEED ORIGIN

| CODE | |
|---|---|
| 1 | Standing trees |
| 2 | Felled trees |
| 3 | Rodent caches |
| 4 | Seed production area |
| 5 | Seed orchard |
| 6 | Arboretum |
| 7 | Controlled pollination |

NOTES

Figure 2.--Seed lot inventory record printed on back of seed lot record card.

The right-hand column records information on the seed lot itself; for example, whether collected from standing or felled trees, and handling and storage conditions. Space is also provided for notes on angiospermous fruits.

Inventory information recorded on the back of the card includes data on storage and viability and records of withdrawals, destination, and use.

## Disposition of Records

Each organization using seed lot records can adopt its own administrative procedures to care for them. But each unit should recognize two important points: First, seed lot numbers must accompany seeds used for direct seeding and planting stock to the field; and second, seed lot numbers must be a part of the final seeding or planting report. Complete seed lot and artificial regeneration records will enable future foresters to judge the quality of specific seed sources.

## Instructions and Codes

Detailed instructions and codes for recording forest tree seed information in California may be obtained by writing to the Director, Pacific Southwest Forest and Range Experiment Station, Forest Service, P. O. Box 245, Berkeley 1, California.

NOTICE: A uniform system of naming report series has been adopted for Forest Service Experiment Stations. Beginning January 1, 1963, research documents published by the Forest Service will be in one of these three series:

1. A numbered series, U.S. Forest Service Research Papers.
2. A numbered series, U.S. Forest Service Research Notes.
3. A numbered series, U.S. Forest Service Resource Reports.

The publishing unit will be identified by letters before the number, and the numbers will be consecutive in the order of publication dates. For example, this Station's first Note in 1963 is designated U.S. Forest Service Research Note PSW-1. Certain miscellaneous material, such as annual reports and experimental forest guides, will continue to be issued as unnumbered, nonserial publications.

The Research Note series formerly published by this Station closed with the release of Research Note No. 211, 1962.

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
PACIFIC SOUTHWEST
FOREST AND RANGE EXPERIMENT STATION
POST OFFICE BOX 245
BERKELEY 1, CALIFORNIA

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

INTERMOUNTAIN FOR EXP STA5 02
FOREST SERVICE BLDG
OGDEN UTAH